

Amendments to the Claims

This listing of claim replaces all prior listings of claims in this application.

Claims:

1. (Currently Amended) A method for controlling a magnetoresistive solid-state storage device having a plurality of storage cells for storing a block of ECC encoded data, the method comprising the steps of:

accessing a set of the plurality of storage cells; [[and]]

determining whether information is unrecoverable from a block of ECC encoded data stored in the accessed storage cells;

identifying, from the ECC decoding, zero or more failed symbols in the block of ECC encoded data; and

comparing the identified number of failed symbols against a threshold value, the threshold value being set to be in the range of about 50% to about 95% of the maximum number of failed symbols which can be corrected by error correction decoding the block of ECC encoded data.

2. (Original) The method of claim 1, comprising determining whether information is unrecoverable, by attempting to perform ECC decoding of the block of ECC encoded data.

3. (Original) The method of claim 2, comprising continuing use of the set of storage cells, if the ECC decoding recovers information from the block of ECC encoded data.

4. (Original) The method of claim 2, comprising taking remedial action concerning the set of storage cells, if the ECC decoding does not recover information from the block of ECC encoded data.

5. (Currently Amended) The method of claim [[2]]13, comprising identifying, from the ECC decoding, zero or more failed symbols in the block of ECC

encoded data; and comparing the identified number of failed symbols against a threshold value.

6. (Previously presented) The method of claim 2, comprising determining, from attempting to perform ECC decoding, failed symbols in the block of ECC encoded data that have been affected by a physical failure.

7- 10 (Canceled)

11. (Previously presented) The method of claim 6, comprising determining that there are more failed symbols in the block of ECC encoded data than can be reliably corrected by error correction decoding the block of ECC encoded data.

12. (Previously presented) The method of claim 6, comprising determining that due to failed symbols in the block of ECC encoded data, there is an unacceptable probability that decoding the block of ECC encoded data will not correctly recover original information.

13-20 (Canceled)

21. (Original) The method of claim 1, wherein the block of encoded data corresponds to a sector of original information.

22. (Original) The method of claim 1, wherein the block of ECC encoded data is a codeword, and wherein a plurality of codewords are grouped to form an encoded sector corresponding to a sector of original information.

23. (Original) The method of claim 1, performed prior to use of the storage device.

24. (Original) The method of claim 1, performed during use of the storage device.

25. (Original) A method for controlling a magnetoresistive solid-state storage device, comprising the steps of:

receiving original information which it is desired to store;

error correction encoding the original information to form a block of ECC encoded data;

storing the block of ECC encoded data in a set of magnetoresistive storage cells arranged in at least one array;

accessing the set of storage cells;

forming logical symbol values of the block of ECC encoded data from the accessed set of storage cells;

error correction decoding the block of ECC encoded data to provide recovered information;

if the decoding step provides recovered information then outputting the recovered information and continuing use of the set of storage cells, or else if the decoding step did not provide recovered information then taking remedial action in respect of the set of storage cells.

26. (Original) The method of claim 25, comprising:

identifying, from the ECC decoding, zero or more failed symbols in the block of ECC encoded data;

comparing the identified number of failed symbols against a threshold value; and

if the ECC decoding did not recover original information, or if the identified number of failed symbols is greater than the threshold value, then taking remedial action concerning the accessed set of storage cells.

27-31 (Canceled)

32. (Original) A magnetoresistive solid-state storage device, comprising:

at least one array of magnetoresistive storage cells;

a ECC encoding unit for forming a block of ECC encoded data from a unit of original information; and

a controller arranged to store the block of ECC encoded data in a set of the storage cells, access the set of storage cells, and determine whether the original information is unrecoverable from the block of ECC encoded data stored in the accessed set of storage cells.

33. (Original) An apparatus comprising the magnetoresistive solid-state storage device of claim 32.

34. (New) A method for controlling a magnetoresistive solid-state storage device having a plurality of storage cells for storing a block of ECC encoded data, comprising

accessing a set of the plurality of storage cells;

determining whether information is unrecoverable from a block of ECC encoded data stored in the accessed storage cells; and

obtaining a parametric value for each of the set of storage cells, and comparing each parametric value against a range or ranges.